

REMARKS

The non-final Office Action dated July 21, 2010 has been carefully reviewed and the following remarks are responsive thereto. Claims 18, 21-27, 30 have been amended.

No new matter has been added.

Claims 18-33 remain pending upon entry of the present amendment. Reconsideration and allowance are respectfully requested.

Claim Objections

The Office Action objected to claims 18-33 under 37 C.F.R. 1.75. As presented above, claims 18, 21, 24, 25-27, 30 have been amended. In particular, the detailed amendments of the claims are as follows:

In claim 18 lines 3, 9, the term "calling routing" is changed to "the calling routing".

In claim 18 line 23, the term "registration" is amended to "the registration".

In claim 21 line 2, the term "a route service device" is amended to "the route service device".

In claim 21 line 2, the term "soft switch control device" is amended to "the soft switch control device". In claim 23 lines 9 and 10, the term "a soft switch control device" is amended to "the soft switch control device".

In claim 24 line 10, the term "addition" is amended to "the addition".

In claim 24 line 13, the term "move-out" is amended to "the move out".

In claim 24 line 16, the term "account-cancel" is amended to "the account-cancel".

In claim 25 line 13, the term "a father node" is amended to "the father node".

In claim 26 line 4, the term "a route record" is amended to "the route record".

In claim 26 lines 16-17, the term "an inquiry request" is amended to "the inquiry request".

In claim 27 lines 17, 22, 26, the term "a user" is amended to "the user".

In claim 30 lines 3-5, the term "other nodes" is amended to "the other nodes".

In claim 30 line 9, the term "an inquiry judgment unit" is amended to "the inquiry judgment unit".

By the above amendments, Applicants respectfully request withdrawal of the objection to claims 18-33.

Claim Rejections under 35 U.S.C. §112

The Office Action rejected claims 18-33 under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 21-25, 27, 32-33 have been amended. Applicants respectfully submit that the amended claims 21-25, 27, 32-33 comply with the enablement requirement, and accordingly request that the claim rejections under 35 U.S.C. 112 be withdrawn. The detailed amendments and statement are as follows:

The limitation “the soft switch control devices” recited at line 5 in claim 18 has its antecedent basis “soft switch control devices” recited at line 2 in claim 18.

The limitation “the user node” recited at line 1 in claim 21, at lines 8 and 10 in claim 23, and at lines 10 and 11 in claim 24 is amended to “the report node”, which has its antecedent basis “report node” recited at line 14 in claim 18. With reference to “the report node information refers to the node reporting route information, and may be S or R” in page 12 lines 17-18 of the original specification, and “if there is record of user to be looked up in the inquiring result, judging whether the report node in the record is soft switch device, if yes, returning to the user route, otherwise, continuing inquiring the report node” in page 16 lines 5-7 of the original specification, it can be seen that no new matter has been added in this amendment.

The limitation “the local node” recited at line 2 in claim 22 and at line 13 in claim 24 is amended to “a local node”.

The limitation “the highest layer” recited at line 6 in claim 23, at lines 13 and 14 in claim 24, at line 6 in claim 32, and at line 6 in claim 33 is amended to “a highest layer”.

There is no limitation of “the soft switch control devices” recited at lines 3-4 in claim 24.

The limitation “the lowest layer” recited at line 9 in claim 25 is amended to “a lowest layer”.

The limitation “the route information database” recited at line 17 in claim 27 is amended to “a route information database”. Accordingly, the limitation “the route information database” recited at line 26 in claim 27 has its antecedent basis “route information database” recited at line 17 in claim 27. The limitation “the route information database” recited at lines 3 and 4 in claim 24 has its antecedent basis “route information database” recited at line 31 in claim 18.

Claim Rejections - 35 USC§103

Claims 18-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pershan (US 6865266 B1) in view of Elliott et al. (US 20040022237 A1). Applicants respectfully traverse this rejection for the reasons stated herein below.

Claim 18

Independent claim 18 defines:

“A method for implementing call routing, to be used in a next generation network using soft switch control devices as core control devices, comprising implementing the call routing by route service devices, wherein each route service device is only connected with one or more of the soft switch control devices and one or more of other route service devices, wherein the route service devices and the soft switch control devices are networked in a layered way,

wherein implementing the call routing by the route service devices comprises the following steps of:

(a) when a route of a user in the next generation network changing, a soft switch control device that the user moves to or moves out of reporting a changed route information related to the user to a route service device at father node of the one of the soft switch control devices, the changed route information including user characteristics information, report node information and route operation type;

(b) the route service device that received the reported changed route information looking up a record of a user to be registered from a route information database, and registering a route record of the user to the route information database according to the reported changed route information and content of the record of the user;

(c) when a route information of the user reflects a change between the route service device that finished registration and its father node, the route service device that finished registration broadcasting the route information reflecting the change to a route service device at father node of the route service device that finished the registration;

(d) the route service device that received the broadcasted route information registering and broadcasting the received broadcasted route information according to the same method as the route service device that received the reported changed route information;

(e) when calling across domains, a soft switch control device to which the calling belongs initiating an inquiry to route service device at father node of the soft switch control device to which the calling belongs;

(f) the route service device that received a request of the inquiry looking up a route record of a user to be looked up from the route information database, if an inquiring result of the route of the user or an inquiring result indicates that the user does not exist is obtained, performing step (h), otherwise, performing step (g);

(g) the route service device that received the request of the inquiry continuing an inquiry to a node in said route record, if there is no route record, continuing an inquiry to its father node, and returning to step (f); and

(h) the route service device that received the request of the inquiry returning the inquiring result to the node that initiated the inquiry, any node that receives the inquiring result continuing to return the inquiring result, until returning to the soft switch control device which first initiated the inquiry.”

First, claim 18 of the present invention recites “**each route service device is only connected with one or more of the soft switch control devices and one or more of other route service device**”. Neither Pershan nor Elliott, either separately or in combination, teaches or suggests these technical features in claim 18 of the present invention.

With reference to figure 1 in Pershan, it can be seen that media/proxy server 132, 156 are connected with soft switch 130 or 152 and IP telephony device 106 or 154, and media/proxy server 132, 156 are also connected with each other. Specifically, in figure 1 of Pershan, the IP telephony device 106 is connected to media/proxy server 132 and the IP telephony device 154 is connected to media/proxy server 156, meanwhile, the soft switch 130 is connected to media/proxy server 132 and the soft switch 152 is connected to media/proxy server 132 and media/proxy server 156. It can be seen that the media/proxy server is not only connected with soft switch and other media/proxy server, but also is connected with IP telephony device. Therefore, Pershan does not teach or suggest the technical features **“each route service device is only connected with one or more of the soft switch control devices and one or more of other route service device”**. Elliott also fails to teach or suggest the above features of claim 18 of the present invention.

Second, claim 18 of the present invention recites **“when a route of a user in the next generation network changing**, a soft switch control device that the user moves to or moves out of **reporting a changed route information related to the user** to a route service device”. That is, **when a route of a user in the next generation network changing**, the soft switch control device will **report a changed route information related to the user** to a route service device, irrespective of whether a call is initiated. More specially, **when a route of a user in the next generation network changing**, the route information related to the user will be updated via the related soft switch control devices and the related route service devices.

Neither Pershan nor Elliott, either separately or in combination, teaches or suggests the above technical features in claim 18 of the present invention. The Office Action asserts that Pershan discloses “Soft switches 130, 152 provide calling and called information to the servers, then the servers determine routing and move the call to its ultimate destination, e.g., they determine the routing instructions for called numbers. (Please refer to lines 5-19 in column 10 in Pershan.)”, and accordingly Pershan discloses **“when a route of a user in the next generation network changing”**. However, Applicants respectfully disagree.

On the one hand, in the above disclosure in Pershan, there is no concept of **“when a route of a user in the next generation network changing”**. Instead, the context for the above disclosure in Pershan is “Soft switches 130, 152 provide *calling and called information* to the servers, then the servers determine routing and move *the call* to its ultimate destination, e.g., they determine the routing instructions *for called numbers*”. It can be seen that what soft

switches 130, 152 provide is “calling and called information”, that is, only when a call is initiated, there will be “calling and called information”. In other words, only when a call is initiated, soft switch 130, 152 provide “calling and called information” to the server.

On the other hand, in the above disclosure in Pershan, there is no concept of “**reporting a changed route information related to the user**”. Instead, soft switches 130, 152 in Pershan provide *calling and called information* to the servers. And there is no evidence in Pershan that can be used to prove *calling and called information* includes **a changed route information related to the user**. Therefore, in the above disclosure in Pershan the soft switches 130, 152 provide *calling and called information* to the servers *during call processing*. Pershan does **not** teach or suggest “**when a route of a user changing**, a soft switch control device that the user moves to or moves out of **reporting a changed route information related to the user**”. Elliott also fails to teach or suggest the above features of claim 18 of the present invention.

Third, claim 18 of the present invention recites “when calling across domains, a soft switch control device to which the calling belongs initiating an inquiry to route service device at father node of the soft switch control device to which the calling belongs”. Neither Pershan nor Elliott, either separately or in combination, teaches or suggests these technical features in claim 18 of the present invention.

Pershan discloses “the servers determine routing and move the call to its ultimate destination, e.g., they determine the routing instructions for called numbers” (Please refer to lines 5-19 in column 10 in Pershan.). It can be seen that the media/proxy server is responsible for the whole process of calling, that is, determining the routing and moving the call to its ultimate destination. However, in claim 18 of the present invention, the soft switch control device initiates the inquiry to decide the routing. Therefore, Pershan does not disclose teach or suggest “when calling across domains, a soft switch control device to which the calling belongs initiating an inquiry to route service device at father node of the soft switch control device to which the calling belongs”. Elliott also fails to teach or suggest the above features of claim 18 of the present invention.

Accordingly, claim 18 is allowable for at least the above reasons.

Claims 19-24

Claims 19-24 are dependent on claim 18 and are thus allowable for at least the same reasons as claim 18.

Claim 25

Independent claim 25 defines:

“A system for implementing call routing, to be used in a next generation network using soft switch control devices as core control devices, comprising a plurality of soft switch control devices with users,

wherein, the system further comprises a plurality of route service devices, wherein each route service device is only connected with one or more of the soft switch control devices and one or more of other route service devices, each of said route service devices and each of said soft switch control devices form nodes of the system, and the nodes are networked in a layered form, each sub-node has at least a father node, and each father node has at least a sub-node, said soft switch control devices are nodes at the lowest layer, and said route service devices have sub-nodes, wherein:

said soft switch devices are configured for reporting changed route information to the route service device at the father node when a route of its user is changed, and initiating a route inquiry to the route service device at the father node when its user calls across domains; and

said route service devices are configured for registering the reported information, performing adding, deleting and updating of route record in a route information database of the user; broadcasting the changed route information to related nodes, performing inquiry after receiving the inquiry request, and returning inquiring result to the node initiating the inquiry.”.

Applicants respectfully submit that independent claim 25 is allowable for at least similar reasons as stated above for claim 18.

Claim 26

Claim 26 is dependent on claim 25 and is thus allowable for at least the same reasons as claim 25.

Claim 27

Independent claim 27 defines:

“A route service device to be used in a next generation network using soft switch control devices as core control devices, wherein the route service device is only connected with one or more of the soft switch control devices and one or more of other route service devices, wherein the route service device and the soft switch control devices are networked in a layered way, the route service device comprising:

a route information database module,

a route registration module,

a route broadcast module, and

a route inquiry module,

wherein the route information database module is configured for storing a route record of a user, inputting the route record of the user, and providing an interface for accessing the route record of the user;

wherein the route registration module is configured for receiving a route information reported by the soft switch control devices or forwarded by the route broadcast module, looking up a record of the user to be registered from a route information database, and registering the route record of the user to the route information database according to the reported route information and content of the user record;

wherein the route broadcast module is configured for receiving a broadcasted route information and sending the broadcasted route information to the route registration module, and when a route information of the user reflects a change between a local node and its father node, broadcasting the route information of the user reflecting the change to its father node; and

wherein the route inquiry module is configured for receiving or sending an inquiry request, looking up the a record of the user to be inquired from the route information database, returning an inquiring result to a node requesting the inquiry upon finding a route of the user, upon determining that there is no user or upon receiving an inquiring result provided by other nodes, otherwise, continuing an inquiry to the node in the route record, and if there is no route record, then continuing an inquiry to its father node.”

Applicants respectfully submit that independent claim 27 is allowable for at least similar reasons as stated above for claim 18.

Claims 28-33

Claims 28-33 are dependent on claim 27 directly or indirectly and are thus allowable for at least the same reasons as claim 27.


Conclusion

The Applicants believe they have responded to each matter raised by the Examiner. Allowance of the claims is respectfully solicited. It is believed that the present patent application, after the above amendments and statement of opinions, has overcome all the defects pointed out by the Examiner and is in conformity with the relevant provisions, so it should be granted patent rights. The Applicants expect early granting of patent right for this application. If there is still a problem that the Examiner believes is not overcome by the above amendments and statement of opinions, please give the Applicants another chance to make amendments and further clarification or explanation or observation.

Respectfully submitted,

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By



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